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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,101	07/14/2003	Ravi Baliga	ABSI121487	8597
26389	7590	12/18/2003	EXAMINER	
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347			PALABRICA, RICARDO J	
			ART UNIT	PAPER NUMBER
			3641	

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,101	Applicant(s) BALIGA ET AL.	
	Examiner Rick Palabrica	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>10/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim contains language that suggests or makes optional, or functional statements whose contents do not inherently follow from the actual structure recited, such as the "adapted to" clause. Thus, the scope of the claims and/or the metes and bounds thereof cannot be determined. Said clauses accordingly raise a question as to the limiting effect of the language therein on the claims (see MPEP 2106.II.C).

The claim recites the limitation "lower ring beam" in lines 7 and 8. There is insufficient antecedent basis for this limitation in the claim. The term "lower" requires a reference element or direction from which this ring beam or its position must be compared. No such reference is provided in the claim, and its metes and bounds cannot be determined.

The claim recites the limitation, "each duct having an inlet disposed near the reactor vessel closure head." Underlining provided. The term, "near", is relative (i.e., 1 inch, 1 foot, 1 yard?), it can be given no definite meaning and accordingly it renders the claim vague and indefinite, and the metes and bounds thereof is undefined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al., “Integrated Head Assembly for Korean Next Generation Reactor (Transactions of the 15th International Conference on Structural Mechanics in Reactor Technology, Seoul, Korea, August 15-20, 1999.

Kim et al. disclose an integrated head assembly for a nuclear power plant that allows the components above the reactor head to be lifted in a single step. His device comprises:

A) A lifting assembly having: 1) a ring plate bolted to the reactor head lift plug (see page XI-317, 2nd to last paragraph); 2) three 5-in. diameter vertical lift rods to lift the reactor vessel head during refueling (see page XI-316, middle paragraph, “Lifting Frame” and page XI-318, “Lifting Frame Design”); 3) a spreader plate for the lifting frame, said plate also functioning as a missile shield (see page XI-316, last paragraph). The lift rods engage the plurality of lifting lugs through the spreader plate and the main columns of the lifting frame (see page XI-316, “Lifting Frame”). Applicant’s claim language of “lower ring beam” reads on Kim et al.’s ring plate.

B) A $\frac{1}{4}$ in. shroud assembly attached to the support structure (see page XI-318, top paragraph). This support structure is connected to the ring plate and horizontal bracings at vertical increments (see page XI-317, last paragraph and 2nd to last paragraph).

C) A seismic support that restrains the control rod drive mechanism that is connected to the cooling shroud through the supporting columns of said shroud (see page XI-317, "CEDM Seismic Support").

D) A missile shield disposed above the control rod drive mechanisms (see page XI-318, "Missile Shield Design"). This missile shield supports the upper air plenum, cooling fans and lift tripod that are all attached, either directly or through other structural elements, to the shroud assembly. Thus, the missile shield is also attached shroud assembly in the same manner as the elements it supports.

E) A plurality of ducts defined by baffles and the shroud (see page XI-318, 3rd paragraph). The duct outlets comprise apertures in the shroud assembly and a plurality of fans is attached to the shroud assembly at the duct outlets (see page XI-318, "Cooling System Design").

As to the configuration of the cooling duct inlet and outlet, note that Kim et al. disclose that the control rod drive mechanism cooling system comprises of three fans that produce cooling air flow downward along the lengths of the control rod drive housings and outgoing flow upward into the upper air plenum. A cooling baffle separates the incoming from the outgoing air flow. (see page XI-318, 3rd paragraph and page XI-316, 4th paragraph). The cooling fans and associated air inlet duct are

inherently near the reactor vessel closure head because otherwise they would not provide effective and economical cooling to the control rod drive mechanism that penetrates the head. The cooling duct outlet is distal from the inlet because it is separate from the inlet.

Note that the claim includes statements that are either essentially method limitations or statements of intended or desired use, e.g., "for a nuclear reactor" and "adapted to". These clauses, as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference, as long as the structure of the cited references is capable of performing the intended use. See MPEP 2111-2115.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

[A]pparatus claims cover what a device is, not what a device does."
Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

The system in the cited references is capable of being used in the same manner and for the intended or desired use as the claimed invention.


Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 7:00-4:30, Mon-Fri; 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP
December 4, 2003


MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER